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ABSTRACT

An approach to integrating formative evaluation into externally-mandated program reviews in higher education is suggested. Externally-mandated reviews are generally concerned with the summative evaluation of academic programs. The first step is to classify the mandated program review criteria using a two-dimensional model. This model is based on a cross-classification of the two major dimensions of program sequence and program participants. The model can be used to examine externally-mandated program review criteria in order to determine aspects of a college program that are not currently being assessed. The next step is to develop criteria that can be used to enhance the utility of the mandated evaluation for formative purposes. Through the detailed assessment of program review criteria and the interrelations between these criteria, a view of statewide and institutional priorities can be developed. Data from a medium-sized urban university are used as illustration. One of the consequences of using this model in the case study is the identification of the great emphasis placed by the governing board on student/output criteria and administrator/output criteria, while two other possible program review criteria areas (student/process and faculty/process) are not assessed. (Author/SW)

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THE ROLE OF FORMATIVE EVALUATION IN EXTERNALLY MANDATED PROGRAM REVIEWS IN HIGHER EDUCATION

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Abstract

The purpose of this paper is to suggest an approach that can be used for integrating formative evaluation into externally mandated program reviews. The first step in this integration is to classify the mandated program review criteria using the two dimensional model developed in this paper. This model is based on a cross-classification of the two major dimensions of program sequence and program participants. This model can be used to examine externally mandated program review criteria in order to determine aspects of the program that are not currently being assessed. The next step is to develop criteria that can used to enhance the utility of the mandated evaluation for formative purposes. The model can be used to suggest criteria for this formative purpose. The model is illustrated using data from a medium sized urban university.

THE ROLE OF FORMATIVE EVALUATION IN EXTERNALLY MANDATED PROGRAM REVIEWS IN HIGHER EDUCATION

The purpose of this paper is to suggest a model that can be used for integrating the formative evaluation of academic programs with the requirements of mandated program reviews in higher education. Externally mandated reviews are program evaluations that are undertaken at the request of an outside agency or organization. Statewide program reviews that are typically required by governing boards in higher education and also accreditation activities would all fall into the category of externally mandated program review.

Externally mandated reviews are generally concerned with the summative evaluation of academic programs at the university. Summative evaluations focus primarily on the final outcomes of the academic programs. A good example of the types of outcomes that can be used for summative evaluation in higher education is the set proposed by the National Center for Higher Education Management Systems (Lenning, 1977). According to Lenning (1977), outcomes are the end results of the processes that occur within postsecondary education institutions and programs. This concern with "end results" can be contrasted with formative evaluations of academic programs in higher education.

Formative evaluations of academic programs should assess criteria that can be used to provide feedback to the program

participants in order to improve the program. This idea of feedback and correctives is an essential ingredient of formative evaluations. The distinction between formative and summative evaluation was initially introduced by Bloom, Hastings and Madaus (1971) in relation to the evaluation of student learning. We feel that this idea can be meaningfully applied to program reviews in higher education as well. Our use of the term is more general with specific emphases on the feedback and corrective aspects of the evaluation.

The objectives of formative and summative evaluations are different, but not necessarily contradictory. In this paper we have combined the goals of each type of evaluation. The need for this integration is based on the notion that externally mandated reviews can be made more productive, if the goals of formative evaluation can also be met concurrently during the same evaluation. The method used to develop criteria for both formative and summative evaluation is based on the model described in this paper.

The first step in increasing the formative evaluation aspects of an externally mandated program review is to assess the criteria that are currently being used as a part of the summative evaluation. This can be accomplished by categorizing the mandated criteria into a simple two dimensional model. This model is created by the cross-classification of the major stages

that any academic program must pass through (input, process, and output) with the major particpants in the decisions concerning the academic program criteria (students, faculty, and administrators). This model for classifying program review criteria will be discussed in depth in the next section.

Once the mandated criteria have been classified, the next step is to develop criteria that can be used to enhance the utility of the program evaluation for formative purposes. The most important criteria for the formative evaluation of an academic program would be in the process cells and then perhaps the input cells. These cells in the model for assessing potential program review criteria would be most crucial because of their potential for alterability. Of course specific criteria would vary in terms of alterability. The identification and quality of the process criteria are crucial from a formative evaluation perspective. The process criteria define what is actually happening in the program and also the technology that is being used to implement the planned changes of the input variables into outcomes. Although the input variables may be important from a formative perspective, these criteria will generally not have as much potential for alterability.

In summary, the purpose of this paper is to propose an approach that can be used to combine formative evaluation with the summative evaluations that are mandated by external

agencies. In order to accomplish this intergration, a model is proposed for examining the mandated criteria in order to develop new criteria that can be used in conjunction with the mandated program evaluation. The model for examining program review criteria can be used to identify weaknesses in the existing structure of the summative outcomes that limit their usefulness for formative evaluation. It is anticipated that the criteria used in mandated reviews will tend to be in the outcome category. The rationale and description of the model for examining program review criteria is described in the next section. This model will then be applied to examine a set of criteria that were used in an actual program review at an urban university.

Description of the model

The model for examining mandated program review criteria proposed in this paper is composed of two major dimensions. The first dimension represents the major stages that any program activity must pass through - input, process and output. The second dimension is identified by the participants in the decisions concerning academic programs - that is, students, faculty and administrators. We recognize the presence of other influences on the institution and program, such as governing boards, legislatures, communities, alumni, employers, and media, but our model holds that these influences are mediated through

one or more of the three major institutional participant groups identified above. The two dimensions can be cross-classified to yield a 3 x 3 matrix with nine cells.

In order to assign program review criteria to one of these cells two principles can be used. The principle for assigning criteria to the first dimension of program sequence depends on whether or not the criteria is present at the onset of the program (input), used in the implementation of the program (process), or represents the outcome of the program (output). The principle for assigning criteria to the second dimension is based on a consideration of which of these three major groups has primary control over the action represented by the criteria. For example, students enter the program with certain characteristics (e.g., ability, motivation, previous achievement). These characteristics would be classified as student/input characteristics. Another example is the arrangements that are provided by the program for accommodating diverse student needs (e.g., day care facilities, off-campus courses, and weekend courses). These characteristics are primarily under the control of administrators and relate to program process; these would be placed in the administration/process cell.

Each of the cells produced by the cross-classification of the two dimensions - program sequence and program participants -

can define a set of criteria that can be used for program review by an outside agency and/or developed by a university in order to supplement the information required by each group. These criteria can be used by interested external or university based groups to examine program quality, efficiency, or other goals. The choice of criteria and the cell which it represents is very important because the planning and decision making activities that result from the program review will vary among the various parties depending on the cells which are used and the evaluation criteria generated within cells. Although the cells can be separated analytically, the criteria and the cells within the model are in reality dynamically inter-connected.

The classification of program review criteria into this model can highlight the cell or cells which are currently receiving the greatest emphasis in the external review. It can also identify empty cells, duplication, and criteria not currently being used in the external program review activities which the university may want to include in its own program review.

Since each cell can be examined independently, a cell can generate its own definition of program quality. Ideally, for formative evaluations all of the cells should be represented in the program review and each cell should contain multiple criteria. The assessment of program quality should not be based

on any single criterion or any single cell. The definition of quality should be multi-dimensional in the sense that there should be multiple criteria within cells and also multi-dimensional in the sense that several cells are used.

It is also important to note that the cells are not necessarily of equal importance to either group. In fact different cells in the model can be assigned different levels of importance depending on the decision-making and planning context of the program. By examining through this model the criteria proposed by an outside agency, it is possible to draw inferences concerning the value assigned to each cell by the board. Such inferences can affect internal planning and policy.

Making the relative importance and value of the various cells of external program review explicit is very useful to administrators and evaluators within the university who are typically confronted with a wide variety of seemingly unrelated program review criteria. Making the structure underlying the criteria explicit enables them to place more weight on the collection and analyses of data for criteria that are of major importance to the outside agency and the university. It can also be used to suggest supplemental program information that the university may want to obtain in conjunction with the criteria mandated by the state board's program review activities.

In spite of the increasing use of state mandated program reviews, relatively little time and effort has been invested in examining the structure of currently used criteria for their concurrent formative use within institutions. The selection of criteria to a large extent determines the priorities and policy that can be derived from the evaluation and used in planning; both statewide planning and within university planning (Bloom, et al., 1971; Dillon and Starkman, 1981; Dressel, 1976; Starkman and Bellis, 1977; Tyler, 1949).

In order to illustrate the classification of mandated criteria into the proposed model, a set of criteria proposed a board of higher education will be examined. These criteria were used in the program evaluations of an urban university.

Case Study

The example used in the case study was conducted at a medium sized university (7,000 undergraduate and graduate students). The student body is primarily black (75%), and there are almost twice as many female students as male students. It is a commuter university and most of the students come from the metropolitan area.

The university is operated under the governance of a board of governors of state colleges and universities. The board of governors has a responsibility to "...review periodically all existing programs of instruction, research and public service at

the state universities and to advise the appropriate board of control if the contribution of each program is not educationally and economically justified". The program reviews which were developed to meet this responsibility are designed primarily to address state-level concerns. The governing board also recognizes that "...program reviews support internal, university decisions related to planning, resource allocation, program improvement, and accreditation requirements".

While reviewing the criteria selected by the governing board for program review, it was recognized that the criteria were not assessing several program components which would be of significance to the institution for formative evaluation, although not necessarily of interest to the state board. In fact most of the criteria seemed to fall into a small subset of areas. In order to systematically examine this observation, the model discussed in the previous section was developed. Each of the criteria for program review were examined and classified into the model for examining mandated criteria. The results are shown in Table 1.

Overall there were 32 criteria used in the program review. Approximately 28 percent of the criteria were classified into student/output cell. This was the most heavily weighted cell. Educational aspirations, satisfaction with the program and student grade final point averages are examples of the typical

criteria included in this cell.

The administrator/output cell was the next most heavily weighted cell with 18.8 percent of the criteria being classified into this category. Some of the typical criteria that occurred in this category were number of courses taught, unit costs, and accreditation of the program.

The third largest cell was the administrator/process cell with approximately 16 percent of the criteria assessing behaviors from this category. Arrangements for off-campus courses, academic support and library support are all examples of this cell.

The faculty/input cell included 12.5 percent of the criteria (e.g., program objectives, number of part-time faculty and percent tenured). There were 9.4 percent of the criteria in the student/input cell (e.g., student background characteristics, high school ranks and entry exam results). Finally, there were 6.2 percent of the criteria in the administrator/input cell (e.g., enrollment data and resource requirements).

One of th most interesting findings is the fact that the student/process and the faculty/process cells were not assessed by any criteria. In general when educators think about program evaluation, these are the types of activites that are typically used to define the quality of a program, at least from a

formative evaluation point of view.

The model clearly highlights the emphasis on input and output activities with 56 percent being outcome criteria, 28 percent input criteria and 16 percent process criteria. The criteria are about equally distributed between student and administrator categories with 38 percent and 41 percent respectively; approximately 22 percent of the criteria fall under the faculty category. While these emphases may be most appropriate for externally based decisions about programs, the under-represented categories in the example are equally significant to internal planners.

Based on this assessment of the criteria in terms of the model described in this paper, several activities are currently underway to develop criteria that can be used to assess the empty cells - student/process and faculty/process. Some of the criteria that are being considered are participation in classroom discussions, attendance, and the use of learning supports and counseling services. All of these criteria which would be in the student/process cell.

Discussion

The purpose of this paper was to present a model that can be used to integrate formative evaluation criteria into ongoing mandated summative evaluations. An important part of this approach involves the development of a model that can be used to

highlight the criteria currently used in any evaluation of academic programs in higher education. Through the detailed assessment of program review criteria and the interrelations between these criteria, a view of state-wide and institutional priorities can be developed. The model proposed in this paper can be used to stimulate an examination of the possible relationships between criteria. Some possible questions are as follows: Are there correlations between faculty input characteristics and student process? Is there a relationship between faculty input and faculty process? What is the impact of faculty input and process on student outcomes? What would happen to student outcomes, if we changed faculty input? Such questions could lead to a greater understanding of the process of schooling in higher education.

One of the consequences of using this model in our "case study" was the identification of the great emphasis placed by the governing board on student/output criteria and administrator/output criteria, while two other possible program review criteria areas - student/process and faculty/process - were not assessed at all.

Since outside agencies are primarily concerned with summative evaluation, it is not too surprising that in our case study the criteria are not equally represented in each cell in the model. It was apparent that the governing board was not

primarily concerned with process criteria that might have explained outcome results obtained from the program undergoing review. However, from a feedback/corrective point of view, the criteria areas that could provide the most useful information for revising a program, if that seemed appropriate, would tend to fall in the process cells - student, faculty, and administrator. Two of the process areas (student and faculty) that would be very useful for the formative evaluation of an academic program were not even evaluated within the current program review structure. The process cells would represent criteria that should be of concern in most formative program evaluations; these are the variables that define what the faculty, students and administrators are actually doing and is typically considered the "academic program".

In developing criteria that are appropriate for all the programs and universities within a system, the governing board has identified areas that would be the most general and thereby applicable to a wide variety of different programs. Unfortunately, these reviews lose some of their usefulness within each university because of this generality. Since the externally mandated program reviews represent a major evaluation activity by the universities within the state, the administrators within the university that are responsible for the program evaluations should be aware of the impact of the

criteria that are chosen.

The response made by the university used in the case study was to develop criteria that could be used to assess areas not currently tapped by the board criteria in order to maximize the internal utility of these reviews for formative evaluation. The view adopted was that since the programs were currently undergoing an externally mandated program review, the supplemental information designed to address specifically the within-university planning, management and decision-making needs should become an integral part of the process and not merely ancillary.

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Table 1. Classification of Evaluation Criteria

Sequence	Participants	Sample criteria	Percent
Input	Students	Student characteristics	9.4
	Faculty	Program objectives	12.5
	Administrators	Program resources	6.2
			28.1
Process	Students	Time on task	0.0
	Faculty	Student/faculty interaction	0.0
	Administrators	Support services	15.6
			15.6
Output	Students	Satisfaction with program	28.1
	Faculty	Grant dollars	9.4
	Administrators	Unit/instructional costs	18.8
			56.3

Note - Percentages represent the proportion of criteria in each cell out of total of 32 criteria.